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EXAMINER	
NGUYEN, LAM S	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,256	BARRY ET AL.	
	Examiner	Art Unit	
	LAM S. NGUYEN	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-74* is/are pending in the application.

4a) Of the above claim(s) *10-16,21 and 22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,17-20,23-33,37,41,42,48-50,57 and 63-74* is/are rejected.

7)☒ Claim(s) *34-36,38-40,43-47,51-56 and 58-62* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 October 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/05/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election with traverse of Species I regarding to FIG. 3-4 and including claims 1-9, 17-20, 23-49, and 51-74 in the reply filed on 10/26/2005 is acknowledged. The traversal is on the ground that the searches would be co-extensive and would not unduly burden the examiner. This is not found persuasive because burden is not only based upon searches being co-extensive. Examination and analysis for determination of patentability creates burden. Therefore, the requirement is still deemed proper and is therefore made FINAL.

As a result, claims 10-16 and 21-22 are non-elected and withdrawn from further consideration.

In addition, the indicated allowability of claims 1-46 is withdrawn in view of the newly discovered reference(s) to Wen (US 6428157) and Terasawa (US 4636814). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 33, 59-62, 68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 33 recites the limitation "the amplifier" without sufficient antecedent basis for this limitation in the claim.

Claims 59-50 recite the limitation "the number of pages" without sufficient antecedent basis for this limitation in the claims.

Claim 68 recites the limitation "...the media coating fluid is higher lower than ..." on line 2. It is unclear if the fluid is higher or lower than the predetermined level.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 9, 17-18, 23, 42, 57, and 65-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen (US 6428157) in view of Terasawa (US 4636814).

Wen discloses an apparatus in a fluid media coating system, comprising:

a supply item for the storage of a media coating fluid (*FIG. 1, element 44*);

an applicator (*FIG. 1, element 44*) having a trough for receiving the media coating fluid from the supply item and delivering onto a print medium (*FIG. 1, element 130*) a substantially consistent coat weight of the media coating fluid (**Referring to claim 17**);

Wen however does not disclose a plural point or single point fluid level detection sensor located within the applicator, wherein the fluid level detection sensor measures whether the media coating fluid level within the trough of the applicator is either above or below a threshold position or against a predetermined upper refill limit and a predetermined lower refill limit and generates an output signal and a controller for receiving the output signal and controlling delivery/transferring of the media coating fluid from the supply item to the applicator through a valve assembly depending on the level of the media coating fluid and the status of the media coating system or the media coating operation is in progress (**Referring to claims 1, 9, 18, 23,**

42, 65, 70), wherein a media coating operation is hold or continued when the level of the media coating fluid is lower than the predetermined upper refill limit but higher than the predetermined lower refill limit, and the media coating fluid is transferred from a supply item to the trough of the applicator when the level of the media coating fluid is lower than the predetermined lower refill limit, or the media coating operation is accomplished (**Referring to claims 66-69, 71-74**).

Terasawa discloses an apparatus having a fluid supply system (*FIG. 2, element 13; FIG. 8, element 33*) for providing the fluid to an applicator (*FIG. 2, element 7*) through a snout (*FIG. 2, 8: The nozzle that connects the liquid tube 17 and the applicator 7*) to a trough (*FIG. 2, element 20*) for containing the fluid and a fluid level detection sensor (*FIG. 2, elements 5A-B, 15; FIG. 8, elements 5A-B, 31*) located in the trough for determining if the fluid level is below or above a predetermined level (*single point level*) (*Abstract*) or respect an upper limit and a lower limit (*dual-point level*) (*FIG. 2, 8: The limits are the surface end of the probes 5A-B*) to indicate the current status of the system such as empty or full status. The apparatus also includes a controller (*FIG. 2, element 19: D*river) for driving a valve assembly (*FIG. 2, element 11: Feeder*) to control the delivery of the fluid from the supply system to the applicator in accordance to a signal outputted from the detection sensor, such as when the fluid level is between the level 3A and 3B, the printing/coating is operated normally without fluid transferring; however, when the fluid level is lower that the lower limit, the fluid is transferred to the applicator with or without the printing/coating operation of the apparatus (FIG. 2-8, *column 5, lines 53-61*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time invention was made to modify the fluid media coating system disclosed by Wen to include the

level detection sensor for sensing the fluid level in the applicator as disclosed by Terasawa. The motivation for doing so would have been to be able to automatically feed the applicator as taught by Terasawa (*column 2, lines 25-30*).

3. Claims 2-4, 6-8, 19-20, 24-26, 28-30, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen (US 6428157) in view of Terasawa (US 4636814), as applied to claim 1, and further in view of Yoshida (JP 05131646). (*Note: Regarding to claim 33, the citation "amplifier" is considered as the detector circuitry*).

Wen, as modified, discloses the claimed invention as discussed above and Terasawa also teaches wherein the fluid level detection sensor comprises first and second probes, each is made of conductive material having a connecting end and a measuring end, wherein one of the probe is shorter than the other **(Referring to claims 4, 26)**, wherein the first probe and the second probe are spaced apart from each other such that an impedance between the measuring end of the first probe and the measuring end of the second probe can be measured (*FIGs. 2, 8, elements 5A-B*), wherein the detector (*FIG. 8, element 31*) having an input electrically coupled to the connecting end of the probes for receiving signal related to the measured impedance between the measuring end of the probes and an output that generates an output signal to the controller (*FIG. 8, element 19*) **(Referring to claim 2)**, wherein each of the measuring end of the first probe and the measuring end of the second probe has a surface contactable with the media coating fluid, and the impedance between the measuring end of the first probe and the measuring end of the second probe depends on the area of the surface of each of the measuring ends that is in contact with the media coating fluid (*FIG. 8, elements 5A-B: Each probe 5A-B has a surface area that contacts to the liquid. By definition, the impedance or resistance between two points is*

a function of an area that a current flows between two points) **(Referring to claims 6, 28)**, wherein when at least one of the first probe and the second probe is not in contact with the media coating fluid within the trough of the applicator, the measured impedance between the measuring end of the first probe and the measuring end of the second probe is high (*FIG. 2,8; column 4, line 67 to column 5, line 4: When one of the probe 5A-B does not contact to the liquid, the conductivity coefficient of the air (which is higher than that of the liquid) increases the impedance between the probes*) **(Referring to claims 7, 29)**, wherein when both of the first probe and the second probe are in contact with the media coating fluid within the trough of the applicator, the measured impedance between the measuring end of the first probe and the measuring end of the second probe is low (*FIG. 2, 8; column 5, lines 18-22: When both probes 5A-B contact to the liquid, the conductivity coefficient of the liquid reduces the impedance between the probes*) **(Referring to claims 8, 30)**, wherein if the fluid level detection sensor indicates that the media coating fluid level is low, then the controller determines an optimum time in which to transfer media coating fluid from the supply item to the applicator (*FIG. 2, 4-9*) **(Referring to claim 19)**.

Wen in view of Terasawa, however, does not teach an oscillator having an output electrically coupled to the connecting end of the first probe and the input of the detector, and wherein the connecting end of the second probe is coupled to ground **(Referring to claims 3, 25)**, wherein the oscillator outputs an AC signal through a resistor and capacitor in the form of a square wave, wherein the amplifier comprises a comparator **(Referring to claims 31-33)**.

Yoshida discloses a fluid level sensor having first and second probes (*FIG. 1, elements 37-38*) for sensing fluid level in a container (*FIG. 1, element 36*), an oscillator (*FIG. 1, element*

31), and a detector circuitry (*FIG. 1, elements 35, 39*), wherein the oscillator (*31),* through a capacitor *C1* and resistor *R4,* outputs a square wave (*FIG. 2: The square wave V4*) to an input of the detector (*35)* and an connecting end of the first probe (*38) (*through the switch *34)*, and an connecting end of the second probe (*37*) is coupled to ground (*GD*), wherein the detector circuitry comprises a comparator (*FIG. 1, element 39*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time invention was made to modify the fluid level sensor disclosed by Wen in view of Terasawa to include the oscillator that is in connection to the first probe and the detector, and connect the second probe to ground as disclosed by Yoshida. The motivation for doing so would have been to make the detection circuit be a high input impedance in order to generate a stable alternating voltage to prevent malfunction as taught by Yoshida (*paragraph [Effect of the Invention]*).

4. Claim 5, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen (US 6428157) in view of Terasawa (US 4636814) and Yoshida (JP 05131646), as applied to claims 1-2 and 24, and further in view of Stamer et al. (US 5583544).

Wen, as modified, discloses the claimed invention as discussed in the second rejection but is silent wherein the conducting material includes a stainless steel.

Stamer et al. discloses a liquid level sensor having a plurality of conductive sensing rods (*FIG. 2, elements 66, 68, 70, 72*) for sensing a liquid level in a liquid container (*FIG. 2, element 46*), wherein the conductive sensing rods are constructed from stainless steel (*column 3, lines 34-38*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time invention was made to make the sensing rods disclosed by Wen, as modified, being of stainless

steel as disclosed by Stamer et al. The motivation for doing so would have been to provide sensing rods that are corrosion resistant as taught by Stamer et al. (*column 3, lines 34-38*).

5. Claims 48-50 and 63-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen (US 6428157) in view of Terasawa (US 4636814), as applied to claims 42 and 57, respectively, and further in view of Uchikata (US 6024428).

Wen, as modified, discloses the claimed invention as discussed in the first rejection except means for detecting the presence of the supply item and means for detecting the presence of the media coating fluid in the supply item for replacing the supply item if no media coating fluid is detected, wherein the means for detecting the presence of the supply item comprises an optical sensor.

Uchikata discloses a liquid coating/marking apparatus having a liquid supply item (*FIG. 2, element 21; FIG. 9, element 821*) for providing the liquid to an applicator (*FIG. 2, element 20*), wherein the liquid supply item including an optical sensor for detecting the presence of the supply item and for detecting the presence of the liquid in the supply item (*FIG. 3, 6-8*) for purpose of replacing the supply item if no media coating fluid is detected (*column 2, lines 34-40*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time invention was made to modify the liquid coating system disclosed by Wen, as modified, to include means for detecting the presence of the supply item and the liquid inside the supply item as disclosed by Uchikada. The motivation for doing so would have been to ensure the liquid supply source by changing the new supply source or filling the supply source in accordance to the detection as taught by Uchikada (*column 2, lines 35-40*).

6. Claims 20, 37, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen (US 6428157) in view of Terasawa (US 4636814) and Yoshida (JP 05131646), as applied to claims 1 and 24, and further in view of Atherton et al. (US 4806847).

Wen, as modified, discloses the claimed invention as discussed above except a fail-safe circuit to perform a closed-loop status verification test to ensure that the fluid level detection sensors are functioning properly before initiating any attempt to refill the applicator with media coating fluid and wherein the body of the probes is substantially cylindrical.

Atherton et al. discloses a sensing liquid level device having a cylindrical sensing probe (*FIG. 1, element 13*) and a fail-safe circuit for verifying the proper functioning of the liquid level sensor (*column 12, lines 7-17*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time invention was made to modify the liquid coating system disclosed by Wen, as modified, to include the fail-safe circuit for verifying the proper functioning of the liquid level sensor as disclosed by Atherton et al. The motivation for doing so would have been to ensure the liquid level sensor functioning properly to avoid possible failure modes of the sensor as taught by Atherton et al. (*column 12, lines 5-12*).

Allowable Subject Matter

7. Claims 34-36, 38-40, 43-47, 51-56, 58-62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claim 34: The primary reasons for the indication of the allowability of the claim is the inclusions therein, in combination as currently claimed, of the limitation that a

frequency discriminator having an input electrically coupled to the drain of the field-effect transistor and an output, wherein the field-effect transistor receives an output signal having a frequency from the oscillator output and allows the output signal to pass if the amplitude of the output signal is greater than the gate threshold voltage, and the frequency discriminator receives the output signal and at the output generates a logic low if the frequency of the oscillator output is higher than a threshold frequency, or a logic high if the frequency of the oscillator output is lower than the threshold frequency, respectively, is neither disclosed nor taught by the cited prior art of record, alone or in combination.

Referring to claim 38: The primary reasons for the indication of the allowability of the claim is the inclusions therein, in combination as currently claimed, of the limitation that wherein the first probe has two wires and the second probe has two wires, and the fail-safe circuit comprises a. a transistor having a drain, a gate and a source and a capacitor electrically coupled between the drain of the transistor and a wire of the first probe, wherein the source of the transistor is electrically coupled to a wire of the second probe, and the gate of the transistor is adapted to receive a control signal is neither disclosed nor taught by the cited prior art of record, alone or in combination.

Referring to claims 43, 58: The primary reasons for the indication of the allowability of the claim is the inclusions therein, in combination as currently claimed, of the limitation that is counting the number of pages coated since the fluid level reaches the predetermined upper refill limit and determining if a media coating request is received neither disclosed nor taught by the cited prior art of record, alone or in combination.

Claims 59-62 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of claim 58.

Claims 35-36, 39-40, 44-47, and 51-56 are allowed because they depend directly/indirectly on claim 34, 38, or 43.

Response to Arguments

Applicant's arguments, filed 12/15/2003, with respect to the rejection(s) of claim(s) 65-74 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S. NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D. MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN
01/06/06

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PRIMARY EXAMINER